

FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of Creation and Expansion of a Low Power Radio Service -- On the Experimental
Measurements of the Third Adjacent Channel Impacts of Low Power FM Radio Stations,
Pursuant to MM Docket No. 99-25, and Public Notice 03-2277

To: The Secretary, FCC Commissioners, and Chief, Media Bureau:

Comments of Kyle Magrill & Barry Magrill

We are writing to you today to comment on Docket No. 99-25, the rules which allowed for the creation of a Low Power FM Radio Service. Specifically, these comments will address the findings and conclusions of the MITRE Report regarding interference concerns of third channel adjacencies.

Background:

In December of 2000, Congress directed the FCC to hire an independent entity to study the effects of allowing LPFM stations to exist on third adjacencies of FM broadcast stations. The Commission selected the MITRE Corporation as the independent entity that would conduct the testing. MITRE hired Comsearch, a subcontractor, to assist with the field testing. On June 30, 2003, MITRE submitted its Final Report ("Report") to the Commission. The Report describes the field measurement data collected by Comsearch and analyzes it with regard to the levels of harmful interference experienced. The Report also contains theoretical analysis, conclusions, and recommendations to the Commission.

Discussion:

Although the MITRE report is generally well presented and substantially dispels the fear that third adjacent, LPFM stations will cause harmful interference, the Report has some potential shortcomings. Most importantly, the Report makes some recommendations that are not supported by the research presented therein. Further, some of the terminology used within the report calls into question whether the authors fully understand the nature of the parameters with which they are dealing. Throughout the Report there are references to the "F50,50 curve". I was unable to find where this term is properly identified. One can infer that the authors meant to say that all tests were conducted within the Full Powered FM's (FPFM) service contour of 60dBu, however, if they failed to define the term we cannot know for certain what they actually measured. The exact definition of this term should be ascertained to verify the methodology used.

Conclusions:

One major failing of the study is that the tests of interference were conducted only on third adjacencies. Although the tests concluded that there was minimal interference to FPFMs, some minor interference was noted. Most of that interference occurred in small pockets that were

within the blanketing contour of the test LPFM antenna. The Report did not establish the absolute cause for the interference. Although the interference associated with third adjacency LPFM broadcasts is statistically insignificant, the Report suggests that some, very small, third adjacency protections be included in the new rules. The problem is that the Report did not go far enough to define whether the interference was the result of third adjacency operation or just blanketing interference resulting in receiver overload. The lack of interference in some locations suggests that the problem could also have been the result of transmitter intermod products. In areas where interference was detected, the transmitter should have been switched to a fourth adjacency. It is likely that fourth adjacencies will also cause substantial interference within their blanketing contours, however, the Commission's rules allow fourth adjacencies to exist within another station's service contour. Only the difference area between third and fourth adjacencies should have been counted for the purposes of determining interference levels from third adjacencies. One could speculate that the zones of interference, in such a study, would probably turn out to be quite small. Without conducting these additional tests, on fourth adjacent channels, it is impossible to scientifically state that any additional interference is caused by operation of third adjacencies. Therefore, the Commission should either consider that no harmful interference is created by third adjacencies or some additional testing should be done before implementing any permanent restrictions to third adjacencies.

The Report proposes that new transmitters be limited to -55dB of spurious emissions at 600kHz. This suggestion is based solely on the fact that the test transmitter used had a published spec of -55dBm. The current standard is -36dB. Here again, we see that the MITRE consultants did not try other transmitters with emissions above or below -55dBm. Because no testing was done using transmitters with inferior spurious standards, we cannot conclude that changing the current rules will have any noticeable effect on interference. As noted in the previous paragraph, it is very possible that interference is simply the result of receiver overload due to blanketing, or possibly, transmitter intermodulation products. There is absolutely no basis within the MITRE report for even suggesting that stricter emissions standards would have any effect. Without such evidence, it would be unreasonable and burdensome to require transmitter manufacturers to adhere to new, stricter standards.

Respectfully submitted,

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